Congratulations! You passed!
TO PASS 80% or higher

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Hypothesis Test - Differences in Mean

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1. **Please download the Excel spreadsheet entitled Intern Scores.** 1 / 1 point

Course 3 Week 4 Quiz.xlsx

This spreadsheet gives a sample of the interns' scores on a test they took on the first day of their internship, and then after they had completed a training. The company is trying to determine whether it is worth spending money on the training. Do the interns' scores either remain the same or improve from the training? In other words, we want to test whether the scores after training are at least as high as the scores before the training.

What is the most appropriate test to conduct in Excel?

- t-test: Two-Sample Assuming Equal Variances
- Data Analysis, t-test: Two-Sample Assuming Unequal Variances
- Data Analysis, z-test: Two Sample for Means
- t-test: Paired Two Sample for Means

Correct
CORRECT

2. **Now run the test using the data analysis tool in Excel. Use an alpha level of 0.05. The null and alternate hypothesis for such a test would be as follows,** 1 / 1 point

H0: μ(score after) - μ(score before) ≥ 0

HA: μ(score after) - μ(score before) < 0

What is the t-statistic? Round your answer to two decimal places.

3.96

Correct
CORRECT

3. **What is the absolute value of the t-statistic cutoff? Round your answer to two decimal places.** 1 / 1 point

1.68

Correct
CORRECT

4. **What should be the conclusion?** 1 / 1 point

- We do not reject the null hypothesis; scores after training are significantly lower than scores before, and thus the training is not worthwhile.
- We do not reject the null hypothesis; scores after training are at least as high as scores before, and thus the training is worthwhile.
- We reject the null hypothesis; scores after training are at least as high as scores before, and thus the training is worthwhile.
- We reject the null hypothesis; scores after training are significantly lower than scores before, and thus the training is not worthwhile.

Correct

5. **You will notice in the data that the interns' ages and genders are included as well. The HR manager in charge of hiring the interns wants to see whether the average scores of the female interns are equal to the average scores of the male interns (use the 'Score After Training' for the rest of the questions).** 1 / 1 point

What is the average score for the female interns? Round your answer to two decimal places.

86.55

Correct
CORRECT

6. **What is the average score for the male interns? Round your answer to two decimal places.** 1 / 1 point

85.35

Correct
CORRECT

7. **Suppose we do not know whether the variance in scores for female interns is similar or dissimilar to the variance in scores for male interns. What types of tests are appropriate to use in Excel? Mark** 1 / 1 point

ALL options that apply.

- [ ] t-test: Paired Two Sample for Means
- [ ] z-test: Two Sample for Means
- [x] t-test: Two-Sample Assuming Equal Variances

✓ **Correct**

- [x] t-test: Two-Sample Assuming Unequal Variances

✓ **Correct**

8. **As mentioned earlier, the HR manager in charge of hiring the interns wants to see whether the average scores of the female interns are equal to the average scores of the male interns (using the 'Score After Training').** **1 / 1 point**

The Null and Alternate hypothesis for such a test would be as follows,

H0: μ(score after, Females) - μ(score after, Males) = 0

HA: μ(score after, Females) - μ(score after, Males) != 0

Now run any test that you picked in question 7 to answer the above question. What is the resulting t-statistic? Round your answer to two decimal places.

0.46

✓ **Correct**
CORRECT

9. **What is the absolute value of the t-statistic cutoff? Please round your answer to two decimal places.** **1 / 1 point**

2.02

✓ **Correct**
CORRECT

10. **What should be the conclusion?** **1 / 1 point**

- (•) We do not reject the null hypothesis; average after scores of male and female interns are the same.
- ( ) We reject the null hypothesis; average after scores of male and female interns are not the same
- ( ) We do not reject the null hypothesis; average after scores of male and female interns are not the same.
- ( ) We reject the null hypothesis; average after scores of male and female interns are the same.

✓ **Correct**
CORRECT